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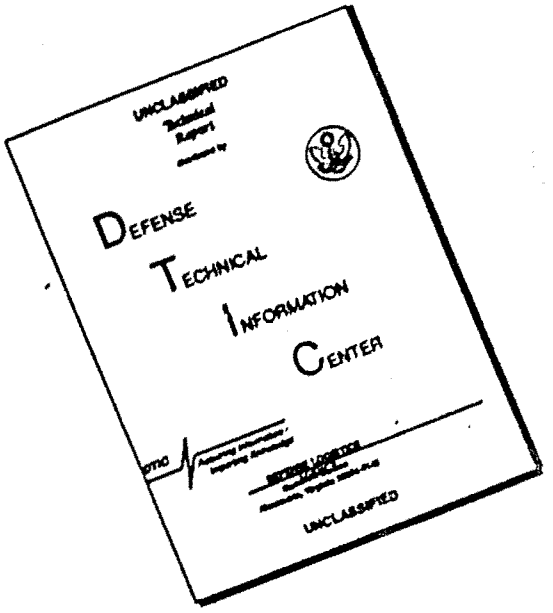

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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO
AGAM-P (M) (5 Jan 68) FOR OT RD 670829 9 January 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 168th Engineer Combat Battalion, Period Ending 31 July 1967

TO: SEE DISTRIBUTION

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2. Information contained in this report is provided to insure appropriate benefits in the future from Lessons Learned during current operations, and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 168TH ENGINEER COMBAT BATTALION
APO US Forces 96289

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EBA-CO

15 Aug 1967

SUBJECT: Operational Report Lessons Learned (RCS CSFOR-65), for the Quarterly Period Ending 31 July 1967

THRU: Commanding Officer
79th Engineer Group
APO US Forces 96491

Commanding General
United States Army Engineer Command, Vietnam (P)
ATTN: AVCC-P&O
APO US Forces 96491

Commanding General
United States Army, Vietnam
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Commander-in-Chief
United States Army, Pacific
ATTN: GPOP-OT
APO US Forces 96558

TO: Assistant Chief of Staff for Force Development
Department of the Army (ACSFOR-DA)
Washington, D. C. 20310

Section 1. Significant Organization or Unit Activities

1. GENERAL: During the period 1 May 1967 - 31 July 1967, the 168th Engineer Combat Battalion retained its primary general support mission of cantonment construction. The majority of the construction effort was directed toward the 1st Infantry Division Base Camps at Di An, Lai Khe and Phouc Vinh, Republic of Vietnam (RVN) with additional effort expended at the 11th Transportation Battalion Base Camp at Cat Lai, RVN. The battalion operated on a 7 day, 75 hour week, with Sunday mornings devoted to maintenance. The construction effort included the erection of messhalls, administrative facilities, maintenance facilities, chapels, water tower and fill stand, and troop billets at Di An, Lai Khe and Phouc Vinh, RVN. In addition a 1200 man messhall was constructed at Cat Lai, RVN and a (40'x60') Dial Central complex was completed at Di An, RVN. On 23 May the 27th Engineer Land Clearing Team was attached to the battalion, and also to Headquarters Company. This attachment gave the battalion the capability of conducting massive clearing operations which will greatly enhance the ability of the Free World Forces in denying the enemy the use of jungle areas as a base of operation. On 1 June 1967, Company B, 168th Engineer Combat Battalion, displaced from Di An to Lai Khe and was assigned responsibility for cantonment construction at that location. In addition, the Earthmoving Platoon, Company C, 34th Engineer Battalion was attached to Company B, 168th Engineer Combat Battalion on 1 June 1967 to provide horizontal construction support. On 6 July 1967 Company D, 168th Engineer Combat Battalion was organized and assigned to the battalion under TOE 5-37E. On the same date the battalion was reorganized under TOE 5-35E. During the reporting period the battalion commitment on combat support operations increased fourfold over any other rainy season reporting period. This could be directly attributed to land clearing operations and repair missions at forward airstrips. The tasks assigned to the battalion continued to present diversified and exciting engineering challenges. The productivity and morale of all assigned units remained high, and the battalion is well prepared for any new combat support or construction missions which may be assigned in the coming quarter.

2. COMMAND: Lieutenant Colonel Edwin F. Pelosky completed his tour as Battalion Commander on 16 May 1967 and was succeeded by Lieutenant Colonel John R. Manning who retained command throughout the remainder of the quarter. Major John H. Terpstra filled the Executive Officer position through 11 July 1967. For the remainder of the period the position was vacant. Major John D. Simpson was succeeded by Captain Joseph Pratt as S3 on 18 July 1967. Captain Douglas C. Guilor succeeded Captain George Davenport as Adjutant on 15 May, while Captain Charles E. Steen retained his position as S4 throughout the period. Second Lieutenant Gordon Nelson assigned the role of S2 on 16 July 1967, the position was vacant up to that time. Second Lieutenant William B. Howell assumed the role of Engineer Officer on 10 July 1967. Captain Donald Barta, Captain Calvin Anderson, Captain Richard Kepner and Captain John Kammerdioner retained command of Headquarters and Headquarter Company, Company B, Company C, and the 557th Engineer Company (L&) respectively. Upon the departure of Captain Donwell Whitley in July 1967, First Lieutenant Donald Hohlen assumed command of Company A, 168th Engineer Combat Battalion. A current battalion organization chart is included as Inclosure 1.

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3. PERSONNEL, ADMINISTRATION, MORALE AND DISCIPLINE: The battalion under went a change in many key positions during the reporting period, in addition during the period the battalion was under strength in captains and to a lesser degree in officers overall. During the period the EM and NCO clubs were expanded and "live entertainment" in the form of floor shows appeared in both clubs. These were extremely well received and appeared to have a definite positive effect on unit morale. The battalion had few serious disciplinary problems during the period, with 4 summary courtmartials being convened. The attendance at chapel services continued to be high, with both Catholic and Protestant services being well attended.

4. INTELLIGENCE AND COUNTERINTELLIGENCE: The S2 section of the battalion was vertually wiped out during the reporting period due to rotation and combat losses. In July 1967 the battalion was screened for personnel to replace losses and an officer was assigned to the section. The section is increasing its route reconnaissance capability, training new personnel in "tunnel rat" techniques, and developing a better defensive plan for the battalion perimeter at Di An.

5. PLANS, OPERATIONS, TRAINING:

a. Plans: The battalion developed a plan for the replacement of a major highway bridge at Ap Ba. Plans were also developed for the construction of a 1272 man cantonment area at Cat Lai, which included a 1200 man messhall. The basic cantonment plan for Lai Khe and Phouc Vinh, were reviewed and the updated version submitted for change to the original directive. A 224 man cantonment plan for the Xom Tam quarry was developed and submitted. Plans were also developed for the repair and improvement of airstrips at Tong Le Cham, Chi Linh, Dong Xoai, Bu Dop, Loc Ninh, Song Be, and Du Phoung. A basic plan was developed giving general guidance for the repair of any airstrip in the battalion zone of responsibility.

b. Operations:

(1) Combat Support: During the reporting period the battalion experienced a large increase in combat support activities, over any other quarter in the rainy season. All subordinate units participated to some degree, and the maximum commitment involved approximately one quarter of the battalion. Major combat support operations included:

(a) Operation Manhattan (20 Apr - 11 May 67): Company A (minus 1st platoon) provided general engineer support to the 1st Infantry Division, to include, minesweeping and LLOC maintenance, constructing bridges and culverts, and jungle clearing. (See Inclosure 2, After Action Report-Operation Manhattan).

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(b) Forward Airfield Repair - Tong Le Cham (19 May - 5 June 1967): The 3rd Platoon, 557th Engineer Company (LE) reinforced by the 2nd Squad, 2nd Platoon, Company B, 168th Engineer Combat Battalion, improved the airstrip supporting Tong Le Cham Special Forces Camp and repaired a timber trestle bridge on the Main Supply Route (MSR) to the camp. (See inclosure 3, After Action Report - Tong Le Cham). 6

(c) Forward Airfield Repair - Chi Linh (5 June - 15 July 1967): The 1st Platoon, 557th Engineer Company (LE) reinforced by two squads, Company C, 168th Engineer Combat Battalion, improved the airstrip supporting the Chi Linh Special Forces Camp. During this period the 1st Infantry Division conducted Operation Billings and used Chi Linh as a fire support control base for two weeks. Additional engineer support to include clearing fields of fire was rendered to the division. A special feature of Chi Linh is that the turnaround is M8A1 matting (see inclosure 4, After Action Report - Chi Linh).

(d) Forward Airfield Repair - Dong Xoai (18 June - in progress at end of reporting period): The 3rd Platoon, 557th Engineer Company (LE) reinforced by one squad, Company C, improved the airstrip supporting the Special Forces Camp at Dong Xoai. The task force was airlifted from Bien Hoa, Chi Linh and Phouc Vinh to Dong Xoai. The airstrip was expanded from 2300 feet to 3400 feet. A 75 foot radius turnaround was constructed at the west end of the runway and a parking apron capable of handling 3 C-130 type aircraft was constructed at the east end. The approach zone on the west end was cleared with included removal by demolitions of the large trees in the glide path. The operation was hampered by heavy rains throughout and extraction of the task force was planned for early August with the parking apron only 60% complete. The area was abundant in high grade laterite, but attempts at placing the soil with a high moisture content proved futile. The runway was in excellent shape, which could be attributed to an adequate drainage concept used during the construction period. In addition the 1st Division established a fire support central base at the airstrip for a 10 day period during the mission to be used in conjunction with Operation Billings.

(e) Operations conducted in conjunction with training of the 27th Land Clearing Team:

1 Binh Phouc (26 June - 30 June 1967): In conjunction with the Binh Phouc Revolutionary Resettlement project, the 27th Land Clearing Team conducted their initial training in a tactical situation. Security was provided by the Loi Thieu subsector advisor and consisted of an ARVN company and a Popular Forces (PF) platoon. During the week's operation 514 acres were cleared and 453 acres windrowed. Two (2) Rome plows were damaged during the operation, one by a RPG-2 and one by a hand grenade.

In addition four (4) members of the team were wounded. Fifty-six (56) anti-personnel mines were detonated and contact was made with enemy forces
7 five times resulting in fire fights. The inadequacy of the security and its failure to sweep the area prior to clearing operations is obvious. The team developed teamwork, signalling measures and devised the basic concept of working as three (3) separate ten (10) dozer teams. The platoon leader also developed valuable command and control techniques. (See Lesson Learned)

2 Ben Tri Woods (2 July - 7 July 1967): As a part of the "Big Picture" for clearing the Saigon By-Pass and to provide better all around security for the quarry at Xom Tam the next area for operational training for the 27th Land Clearing Team was the Ben Tri Woods. In this operation the security was provided by the 2nd Battalion, 28th Infantry, 1st Infantry Division. During the operation 492 acres were cleared. One (1) Rome plow struck an anti-tank mine rendering it a combat loss. In addition, thirteen (13) smaller mines were struck causing no damage or injury. The most significant lesson learned during the operation was the fact that foot infantry limits the ability of the Rome plows to obtain maximum acreages.

3 Upon completion of the Ben Tri Woods (8 July) the 27th Land Clearing Team moved to the Co Mi Woods directly north of Di An. The security provided in this case was a reinforced cavalry troop. For the first time the security was not a limiting factor in the amount of acreage cleared. The inherent flexibility of armored personnel carriers and tanks allow for a rapid change in plans if the situation so dictates. In addition the ability of the armor troops to rapidly sweep an area permits maximum production time. On the seven (7) days clearing took place a total of 2050 acres were cleared, with no tractors damaged although one was struck (on the blade) with an RPG-7.

(f) Operation Paul Bunyon (19 July - inprogress at end of reporting period): The first major clearing operation conducted utilizing the 27th Land Clearing Team commenced on 19 July 1967 with a movement by motor march to the Ong Dong Jungle. The operation was under the tactical control of the 2nd Brigade, 1st Infantry Division. The elements providing security were the 2nd Battalion, 2nd Infantry (Mech) reinforced by Company B, 2nd Battalion, 34th Armor. The Ong Dong Jungle had long been a staging area for major enemy units preparing for operations in Bien Hoa, and Binh Duong provinces. During the twelve (12) days the operation was conducted in the reporting period 4171 acres of jungle were cleared. During this time two (2) Rome plows struck anti-tank mines resulting in damage to the tractors and wounding four (4) men. Due to the large amount of abandoned rubber plantations in the operations area, the use of an anchor chain pulled by two D7E tractors was attempted and found to be useful in clearing cultivated rubber trees. The continuous operation of the D7E tractor presented some maintenance problems particularly in the area of the radiator and radiator belly pan.

(g) Local Security: Weekly platoon sized ambush patrols were conducted at Di An under the control of the S2. Security measures were intensified at all base camps after the attacks on Lai Khe, Phouc Vinh and Phu Loi.

(h) Other Combat Support: Company B, 168th Engineer Battalion resurfaced the road and replaced necessary drainage structures on Route 13 between Lai Khe and Phu Cuong. Heavy rains hampered operation through out the period, however 12.8 kilometers of road was upgraded and 3 culverts replaced. During Operation Billings, Company C, 168th Engineer Battalion repaired and maintained the C-130 strip at Phouc Vinh. This included the rebuilding of the taxiway to allow its use by three (3) aircraft at one time. In addition, three (3) minesweeping teams were provided throughout the operation. Company C also supervised the construction of an artillery gun pad at Quan Loi. During the reporting period the 557th Engineer Company (LE) provided three (3) D7E's with Rome plows in support of the 9th Infantry Division. In addition, convoy support to include "shotguns" were provided as required on the convoy runs to Lai Khe and Phouc Vinh.

(2) Cantonment Construction: During the reporting period construction continued at Di An, Phouc Vinh and Lai Khe and new construction started at Cat Lai. In spite of an increased commitment to combat support, the 168th Engineer Battalion continued to produce great quantities of work of consistently high quality.

(a) Di An: Companyies A, B (until 1 June 1967) and D, 168th Engineer Combat Battalion, continued construction of the main base for 1st Division Headquarters and Support Command, and in the North 40 for the 2nd Brigade, 1st Infantry Division. On the main base production included 200 linear feet of culvert, 16,560 square feet of troop billets (technical assistance and supervision of self-help), one chapel, 1,040 square feet of extension on the Army Post Office, completion of the Dial Central complex, 10,000 square yards of open storage area, and an RRU Operations Center. At the end of the reporting period work continues on storage sheds, troop billets, water well fill stand and maintenance buildings. At the close of the reporting period, the main base was 83½% completed up 3½% from last three months. On the North 40 construction completed during the quarter included: 990 linear feet of culvert, 50,000 square feet of troop billets, 56 shower heads, 5,760 square feet of admin/supply buildings, 1,920 square feet of maintenance buildings, 50 latrine holes, a chapel, 21,000 gallon water fill stand, a post exchange and PX warehouse (PASCOE), and 8,580 square feet of messhall. Work continues on organizational warehouses, troop billets, and maintenance building. The 2nd Brigade is now 74% complete, up 6% from the last reporting period. In general, the Di An construction program is in excellent condition with virtually all essential facilities are completed, and the self-help program for troop billets is proceeding at a vigorous pace. The estimated completion date for the entire project is 1 Jan 1968. During the period a base camp for a Regional Force/Popular Force

Company was constructed at Di An. This included 10,000 square feet of tent floor and frames, stabilized 14,000 square yards of area, 2,000 square feet of mess tents, 10 shower heads, 10 latrine holes and 1475 feet of duckwalk.

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(b) Lai Khe: Company B, 168th Engineer Combat Battalion, displaced to Lai Khe on 1 June 1967 and supported by the Earthmoving Platoon, Company C, 34th Engineer Battalion assumed responsibility for the cantonment construction program for the 3rd Brigade, 1st Infantry Division. During the period 1 June - 31 July 1967 the following work was accomplished: 730 linear feet of culvert, 28,084 square feet of troop billets, 86 shower heads, 28 latrine holes, 6,320 square feet of messhalls, 2,880 square feet of maintenance buildings, 4,840 square feet of administration/supply buildings, and 2,225 square yards of laterite hardstand. The work on the hardstand, and work on the helioport was suspended for a combat support mission. The project is 40% complete. The overall cantonment project is proceeding well. A revised plot plan and scope of work has been submitted to bring the project directive up to date. At the close of the reporting period work continues on administration/supply buildings, storage warehouses, maintenance buildings, and aircraft revetments.

(c) Phouc Vinh: Company C, 168th Engineer Combat Battalion, continued construction for the 1st Brigade at Phouc Vinh. During the quarter, the following work was accomplished 23,400 square feet of messhalls, 10,200 square feet of administrative/supply, 56,240 square feet of troop billets, 112 shower heads, 300 latrine holes, 2,500 square feet of maintenance buildings, 1,040 square feet of organizational warehouses, a 76 foot dog kennel, 400 linear feet of culvert, 700 feet of internal road net. At the close of the reporting period work continues on the aviation support facilities, aircraft revetments and repairing mortar attack damage. The lack of a convoy to Phouc Vinh has reduced the materials stock to such a level as to cause work stoppage.

(d) Cat Lai: The 2nd Platoon, Company D, commenced work at Cat Lai in June. The project will be turned over to the 34th Engineer Battalion on 5 August 1967. The work accomplished during this period was the construction of a 1200 man consolidated messhall and a 20x60 scullery.

(e) Xom Tam: 557th Engineer Company (LE) continued rock production at Xom Tam in general support of 79th Engineer Group. During the quarter the unit produced 26,972 cubic yards of crushed rock, with the following breakdown: 3" minus 7,385 cubic yards; 1½" minus 17,367 cubic yards; 3.8" minus 2,220 cubic yards. The unit also operated a laterite pit which yielded 79,624 cubic yards. A plan for a 224 man cantonment base camp at Xom Tam was prepared and sent forward for action. The abundant supply of rock and laterite in the vicinity of Xom Tam indicate that production of those items would be feasible for the foreseeable future.

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c. The 168th Engineer Bde conducted four (4) major training programs during the quarter. Company D, conducted a thirty-five (35) hour block of instruction on combat engineering skills. This was essential to insure the unit intergrity and skill level of a newly formed unit composed of replacements without experience are of an exceptable level. The training was conducted on Sunday afternoon and after duty hours on week nights. The value of this training will become apparent during the next quarter when Company D conducts its first major combat support exercise. The arrival of the 27th Land Clearing Team created the need for a realistic training program to insure the team was ready for substained combat operation. During the team's initial week incountry they attended the Replacement Training Program conducted by the Support Command, 1st Infantry Division. As the team's equipment arrived after the personnel, the next phase of training was delayed until essential items of equipment arrived incountry. The first week of formal training was conducted in Di An by staff instructors of the 18th Engineer Brigade School. The school was essentially the standard D7E program of instruction (POI) as conducted by 18th Engineer Brigade with some minimum changes included on the Rome plow. The next three (3) weeks of training were practical exercises (PE) conducted with tactical security in the immediate vicinity of Di An. During this period primary effort was spent on developing clearing techniques, coordination with security elements, command and control techniques, and to develop concepts for maintenance in a field location. This period proved to be extremely worth while, since the team received valuable training in a practical situation, and over 3,000 acres of enemy sanctuary were eliminated. A key portion of the battalion's training program was the instruction given to newly arrived officers and non-commissioned officers in theater of operation's construction and construction methods used in the Republic of Vietnam. The instruction was given on the job site during the last hour of the working day. The training considered some aspect of each job, and was so scheduled so that the project was in that phase during the instruction and presented minimum interference with construction. This program proved to be very helpful to the junior leader, particularly the new officers fresh from Officer Candidate School. A program for improving the overall maintenance program was developed by the Battalion Engineer Equipment Officer. This consisted of two hours of training on Sunday morning directed toward a specific group on different Sundays. In this manner all elements of the battalion who have a primary interest in maintenance of equipment would receive periodic refresher training. The emphasis was placed on equipment serviceability criteria, care of log books, and operator responsibility.

6. LOGISTICS: During the period, S-4 continued normal operations including convoys to Lai Khe and Phouc Vinh, and airlift of construction supplies were received at Di An. Of supplies issued, 1,906 tons were used at Di An, 1,548 tons sent to Phouc Vinh, 7,060 were sent to Lai Khe, and 70 tons to Cat Lai. The following supplies were airlifted in support of combat and construction operations; 120 tons to Bunard, 60 tons to Tong Le Chan,

120 tons to Chi Linh, and 20 tons to Phuoc Vinh. In addition, during the period the water supply teams in the B/A section produced 580,000 gallons of water in direct support of combat operations.

7. FORCE DEVELOPMENT: During the quarter the Battalion had the privilege of developing a technique of employment for the Land Clearing Team. It was obvious from the beginning that to be successful the team had to be committed in sub teams of approximately ten (10) dozers. The use of less dozers than this resulted in extremely slow operations and a reduced efficiency. A greater number than this made control extremely difficult and again resulted in inefficient operation. The use of mechanized security troops is highly recommended. The mobility and flexibility of armor lends itself to the operation of the team. In addition the use of a M-113 by the team leader for command and control greatly enhanced the team leader's ability to cover ground rapidly and the organic radio gave him an excellent communications base. The use of a light observation helicopter to recon the area prior to the operation and to control the operation at the beginning of the day is extremely desireable. The team is incapable of supporting itself and must be attached to an engineer company during combat operations. This also allows the engineer company commander to deal with higher headquarters and allows the team leader freedom to conduct the day to day operation. The maintenance support required for substained operation is beyond the capability of the team and the controlling engineer company. An organizational maintenance composed of personnel from the Battalion maintenance section and a field maintenance team from the direct support maintenance battalion are required to help keep the maximum number of tractors operating at all times. The team has not received all of its authorized TOE equipment as yet, and an intellignet appraisal of this aspect of the team's operation can not be made at this time. During its current operation the team has been augmented by equipment from Battalion and Group.

8. COMMAND MANAGEMENT: During the quarter the battalion continued in the survey to determine long range replacement problems for critical items of equipment. In addition the battalion was assisgned four (4) additional 5-ton dumps as test vehicles. These vehicles have built up frames, which were designed for the rougher use given this primary hauling vehicle. The result of this test should become apparent during the next reporting period.

9. INSPECTOR GENERAL: Major John J. Terpstra continued as acting Inspector General until his rotation. At that time Captain Douglas C. Guiler assumed the duties. During the quarter no complaints were received.

10. INFORMATION: The battalion newspaper continued publication on a twice monthly basis, and numerous home town news releases were dispatched regarding awards presented during various operations of the battalion. A team of reporters from Army Digest visited the operation of the 27th Land Clearing Team to gather material for an article on the Rome plow. During operation Paul Bunyon a television team from Columbia Broadcasting System visited the operational area, the results of which are unknown at this time. 12

11. CIVIC AFFAIRS: The Battalion Surgeon and Chaplain continued their efforts in support of the orphanages in the Di An area. In addition the Chaplain assisted local Popular Forces by obtaining scrap lumber from the sanitary fill and having these materials hauled to their base camps. This enabled the people to construct more permanent and secure dwellings. A major project was started in the Di An sub sector by Company A, 168th Engineer Battalion. This consisted of pouring a 27'x158' concrete pad for a high school. In addition, technical assistance was provided throughout the vertical construction of the building. Construction was still underway at the end of the reporting period and the project should be completed in August.

Section 2, Part I, Observations (Lessons Learned)

1. Personnel:

a. Personnel Section

ITEM: Personnel Section Location

DISCUSSION: The battalion has enjoyed in the past the highly responsive personnel services support provided by having the personnel section located at Battalion Headquarters. It was apparent to those experienced with consolidated personnel operations that this immediate response is not possible when consolidation occurs. It is regretably expected during the next quarter, the battalion finance section and all finance records will be moved to Long Binh to be consolidated into the 91st Finance.

OBSERVATION: Due to the highly satisfactory service given by the battalion personnel section as compared with experiences under consolidated systems it is felt that every action should be taken to maintain the present status and resist attempts at consolidation of the finance section.

b. Land Clearing Team Strength

ITEM: Inadequate authorized personnel

DISCUSSION: The Land Clearing Team has no authorized clerical personnel. In all operations to date higher headquarters has required a seemingly increasing supply of reports. Currently the clerical work is

13 done by the team leader in his "spare time". This has proved to be unsatisfactory and has resulted in inaccurate and late reports.

OBSERVATION: Since it appears unlikely that the requirement for reports will decrease, recommend that a clerk-typist be authorized in the Land Clearing Team.

c. Land Clearing Team Strength

ITEM: Inadequate authorized personnel

DISCUSSION: The Land Clearing Team has thirty (30) tractors and fourty (40) operators authorized. Experienced gained on substained combat operation indicate that one (1) operator can not efficiently keep one (1) tractor in operation. Combat losses, R&R, sick call, and fatique from long operation result in the need for additional operators.

OBSERVATION: The authorized number of tractor operators in the Land Clearing Team should be two (2) per tractor.

d. Personnel authorization

ITEM: Operations sergeant in combat engineer company

DISCUSSION: The multiple reports on cantonment construction status, the responsibility for efficient distribution of engineer equipment and Vietnamese national hire personnel, the accounting for engineer construction materials, and the answering of customer unit requests for support all indicate the need for an operations section in a combat engineer company involved in cantonment construction. In addition, when the majority of the company goes on combat support operations the operations sergeant remains behind to control the continuing cantonment construction projects. This usually results in a squad leader or platoon sergeant being pulled from his TOE position to perform the job.

OBSERVATION: Combat engineer companies involved in cantonment construction should be authorized an additional E-6 with an MOS of 12B40.

2. OPERATIONS:

a. Land Clearing Operations

ITEM: Communications

DISCUSSION: The land clearing team when divided into its three (3) teams working over different areas present unique control and maintenance problems. It is necessary to have good communications between the working areas and the control element.

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OBSERVATION: Control has been a problem area because of lack of communication equipment. At present the security element provides 75% of the radios used by the team. This problem should be alleviated when the teams organic radios arrive.

b. Land Clearing Operations

ITEM: Supervision of land clearing

DISCUSSION: In a large land clearing operation, constant, close supervision is necessary for efficient operation, unit coordination, maintenance, and safety. The 1/4 ton truck provided for the team leader can not move over the areas cleared by the team. The vehicle was constantly stuck or hung-up on felled trees.

OBSERVATION: The use of an armored personnel carrier (APC) allows the team leader flexibility and speed in traveling over rough terrain. The team should be assigned four (4) APC's, one (1) for the team leader and one (1) for each subteam leader.

c. Land Clearing Operations

ITEM: Inability of standard 250 CFM compressor (trailer mounted) to follow the clearing operations.

DISCUSSION: The Davey 250 CFM trailer mounted air compressor is not suited for traveling over the terrain after the team has cleared the jungle. The carriage is so low that trees, stumps and boulders are constantly tearing hydraulic hoses and fuel lines causing the compressor to become inoperative.

OBSERVATION: A "rough terrain" air compressor is required to support the land clearing team.

d. Land Clearing Operation

ITEM: Signaling procedures for Rome plow operators.

DISCUSSION: The operator of a Rome plow is constantly exposed to sniper fire, ground attack, mines and is usually the first individual to find structures hidden by jungle. Since sound communications is impractical, some other method must be found.

OBSERVATION: To signal "danger withdraw" to other operators, each operator has a supply of green smoke grenades. This practice has saved casualties and damage to Rome plows when contact is made.

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e. Land Clearing Operations

ITEM: Safety equipment

DISCUSSION: The primary hazards to Rome plow operators are sniper fire, shrapnel, and being struck by limbs and trees. In addition red ants and bees cause a great deal of discomfort.

OBSERVATION: The wearing of flak jackets and steel helments must be mandatory. No Rome plow should be operated without the protective cab. An ample supply of insect repellant should be on hand at all times.

f. Land Clearing Operation

ITEM: Fire hazard

DISCUSSION: The sustained operation of the D7E causes a severe overheating problem. This along with the accumulation of debris and mud in the belly pan presents a very real hazard.

OBSERVATION: The problem of accumulation of debris can be minimized by frequent flushing of radiators and manually cleaning of belly pan. However, an additional fire extinguisher should be on the tractor, preferably a CO_2 type.

g. Land Clearing Operations

ITEM: Operating procedures

DISCUSSION: Jungle clearing operation is governed by security, terrain, vegatation, and weather. A thorough reconnaissance of the working area must be conducted prior to clearing operations.

OBSERVATION: An aerial reconnaissance of the working area should be conducted jointly by the clearing team leader and the security commander. In addition all subteam leaders and their security counterparts must thoroughly plan the next day's operation.

h. Expedient Lifting Devise

ITEM: Engineer combat companies geographically separated from their parent battalion lack a means of bulk handling of construction materials.

DISCUSSION: At Lai Khe and Phouc Vinh large quantities of construction materials arrive on convoys and must be off-loaded in a short period of time.

To accomplish this a modification to the 2½ yard front loader was made. Two prongs 5½ feet long were cut from discarded bulldozer cutting edges. Two (2) holes were drilled in the front loader's clam to match the mounting holes in the prongs. The prongs were bolted to the clam using bolts (see figure 1). This gave the company a fork lift of sorts, which could, if necessary, be converted back to a front back to a front loader. 16

OBSERVATION: This item of equipment has proved to be quite valuable in handling materials when a fork lift is not available.

i. Well drilling

ITEM: "Shooting" through a rock layer using shaped charge

DISCUSSION: While drilling a well at Phouc Vinh it became necessary to use a fifteen (15) pound shaped charge to blast through a layer of rock. The casing was lifted ten (10) feet and the charge detonated. The ensuing blast caused the casing to break and fall. Since alligator jaws were not available the well had to be abandoned.

OBSERVATION: If blasting is required the casing must be removed to a safe distance, at least twenty-five (25) feet from the point of explosion.

j. Cantonment Construction

ITEM: On site materials accountability

DISCUSSION: Construction materials delivered to a work site are often misappropriated by the customer or some other unit for use other than authorized construction. The engineer unit can not efficiently construct without materials on the job site and can not afford the personnel to guard these materials at night. A definite agreement with the customer unit commander that materials on the site are his responsibility to secure and replacement will not be effected has proven to be a satisfactory agreement.

OBSERVATION: Turning over accountability for construction materials to the customer unit commander, once the materials are on site, reduces the chances of misappropriation.

k. Quarry Operations

ITEM: Blasting - substitute for delay caps

DISCUSSION: The non-availability of delay caps called for the inovation of some type delay firing system. The problem was successfully solved by removing the rheostat from a fan speed control box so that five (5) circuits could be fired in rapid sequence by simply turning the knob.

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OBSERVATION: Blast effects were improved significantly over an instant type fusing. Breakage was improved and rock throw was reduced.

1. Airfield Repair

ITEM: Airfield repair during use of facility

DISCUSSION: As often happens in Vietnam tactical necessity dictates immediate heavy usage of an abandoned or deteriorated runway. In order to insure continued use during the emergency, and to upgrade the field for greater capacity, an engineer repair force is airlifted to the assault field. Several steps were used to insure maximum use of the strip was accomplished along with the necessary engineer effort.

1. Traffic Control: Military police must keep unnecessary traffic off the runway. If possible a temporary road should be constructed around the air strip.

2. Aircraft Control: Close liaison must be maintained with the Air Force ground controller. A temporary, one (1) aircraft parking apron should be constructed.

3. Helicopter Landing Facilities: A separate landing area for UH-1D and CH-47 should be prepared to keep rotary wing aircraft well away from the landing strip.

4. All tactical functions of the engineer work (i.e., clearing fields of fire, artillery gun positions, ammunition storage areas, etc) should be planned to allow the engineers to work on the runway when it is free from aircraft traffic.

OBSERVATION: Repair and expansion of a forward airfacility while in use is difficult, however, useful work can be accomplished if prior planning and vigorous execution are emphasized.

3. TRAINING AND ORGANIZATIONS: Personnel Requirements

ITEM: Quarry-crusher operation

DISCUSSION: One problem encountered in the operation of a quarry in the Republic of Vietnam is the organization of the quarry crew, and where the personnel to operate the equipment will come from. Usually a Light Equipment Company operates the quarry, this unit does not have the necessary personnel to perform the many jobs necessary in a quarry organization. There are three (3) solutions to the problem:

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1. Place the Light Equipment Company overstrength.

2. Hire and train local indigenous personnel.

3. Allow an engineer combat company to operate a quarry, and attach to them the equipment and personnel from a Light Equipment Company.

OBSERVATION: Solution (2) is the most desireable because of its limited effect on the strength of other units, however, security problems arise which may make the solution impractical. Solution (1) is most often attempted and is not desireable because the troops usually must come out of a line unit. Solution (3) is undersireable because it ties a line unit to one mission and denies the commander flexibility.

4. INTELLIGENCE: Security

ITEM: Control of Vietnamese Nationals

DISCUSSION: Allowing Vietnamese employees to wander about the area without supervision creates a threat to the internal security of the installations. Often new employees appear in the ranks of familiar employees and it is taken for granted that they were hired and cleared by the Civilian Personnel Officer.

OBSERVATION: Each company size unit should designate a Civilian Personnel Coordinator to work with the Civilian Personnel Officer (CPO). It would be his responsibility to check with CPO to insure all civilians are properly cleared and are reporting to the proper place.

5. LOGISTICS:

a. Maintenance

ITEM: Rome plow parts

DISCUSSION: On jungle clearing operations envolving the D7E, the tractor is often inoperative for items that during normal operations rarely are any problem. The radiator core is punctured by brush and logs which ride over the blade. The bottom radiator tank, which is cast iron, is frequently cracked when the dozer operates over stumps. In addition, combat losses due to the action of land mines cause severe damage to the track pads, track assembly, idler wheels, and the engine. The hydraulic tubes are torn off by brush and falling trees.

OBSERVATION: An over-pack of the following items (at least ten (10)) should be on hand prior to starting any major operation:

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1. Complete radiator assemblies.

2. Complete track assemblies.

3. Complete engine assemblies.

4. All hydraulic hoses.

b. Maintenance

ITEM: Reinforcement of critical areas on D7E

DISCUSSION: The factory protection is not adequate for radiator screens, and belly pans. Stumps and heavy limbs puncture the radiator and belly pan in the course of normal jungle clearing operations.

OBSERVATION: The radiator and belly plate should be reinforced with angle iron and sheet steel prior to using a D7E in jungle clearing.

c. Air Transportability

ITEM: Movement of the 1500 GPH erdlator by aircraft

DISCUSSION: The truck mounted 1500 GPH erdlator can not be moved in C-130 type aircraft because of its height (127.3 inches). In addition the weight of the entire assembly (19,000 pounds) make movement by CH-47 impossible. However, the erdlator van can be removed from the truck chassis and moved by CH-47 type aircraft. The weight of the van (8,100 pounds) makes the addition of heavy bracing impossible since the normal load limit of the CH-47 is 8,000 pounds. Rough handling or twisting of the van can cause internal damage to purification equipment. The following steps should be taken prior to attempting air movement:

1. A thorough reconnaissance and site preparation must be conducted prior to movement. The van must be set in its place of operation, since any further movement requires an additional CH-47.

2. In preparation of the van for airlift wood skids must be attached to the van body and the van rigged using four (4) slings at least twelve (12) feet long. All loose equipment must be removed from the van to lighten the load and prevent internal damage. When returning the van the CH-47 should not attempt to place it directly on the truck chassis, but allow a crane to make final replacement.

3. On the second sortie, the 1½ ton trailer with generator, pumps, tanks, chemicals, hoses, and personal gear is lifted. The canvas top must be removed prior to movement as it will be sucked off by the blade wash. 20.

4. The van must be kept level during movement and operation to prevent oil from running out of the van pumps.

OBSERVATION: Air movement of the 1500 GPH erdlator to remote areas is possible utilizing the CH-47 aircraft. This permits the constant supply of potable water during substained combat operation.

d. Air Transportability

ITEM: Airlift of D6B using a CH-54

DISCUSSION: The 557th Engineer Company (LE) was assigned the mission of airlifting a D6B to a small landing zone at a fire support base. One (1) CH-54 sortie and one (1) CH-47 sortie were allocated for the move. The airlift was accomplished in the following manner:

1. The blade was removed and track adjustment loosened to maximum.

2. Tracks were removed by driving the master pins out as follows:

a. A T-bar device was constructed of drill steel. This was used to transmit the force of the sledge hammer to the track pin.

b. The dozer was parked on a stable laterite surface with the pins located under one of the track rollers.

c. The pins were driven inward only until the track was broken. The pins were not removed entirely.

d. Walk the dozer out of its tracks.

3. The D6B, tracks and blade were prepared for airlifting as follows:

a. A clevis was placed through the end of each track and through the trunion holes at the end of each push arm on the blade. Attach two (2) thirteen (13) foot, 13,000 pound n long straps through each track clevis and then to a common "doughnut". Two (2) nine (9) foot straps are attached to the blade clevis and through the same "doughnut".

b. The tractor was rigged with four (4) twenty (20) foot, 13,000 pound nylon straps attached to a clevis placed at the four lifting points on the tractor. The straps are then attached to a common clevis.

21

4. The blades and tracks are airlifted by CH-47, thirty (30) minutes prior to the tractor. All personnel, tools, etc. were carried as an internal load. The "doughnut" connected to the blade should be hooked up first since it will be dropped last. At the drop point the blade must be dropped free of the tracks to prevent the tracks from becoming fouled with the blade.

5. The tracks were then laid the proper distance apart. Both tracks should be facing the same direction, so that the grousers will lead the pad when the dozer is walked forward. In addition, the tracks are switched, (i.e., right hand becomes left hand) this places the inward driver pin on the outside, greatly facilitating redriving the pin to join the tracks.

6. The tractor was then airlifted by CH-54. Caution must be taken to insure the area is clear of debris, and goggles should be worn by ground personnel. Two (2) men are necessary for hook up. One must handle the hook, the other the clevis, then they must insure the straps do not foul. All mud should be cleaned from the dozer.

7. Eight (8) men are needed to position the dozer on its tracks. If successful positioning is not accomplished within five (5) minutes the dozer should be landed clear and walked on if possible. (This will require an additional fifteen (15) men.) Prolonged hovering with this maximum load will damage the aircraft.

8. When replacing the track, close attention must be paid to aligning the hole to redrive the track pin. A chain comealong, 20 pound sledge and flashlight are necessary to complete the operation. A high pressure grease gun is required to adjust the tracks. The blade can then be remounted.

OBSERVATION: This is a good technique for movement of equipment to an inaccessible location. The range is limited to fifteen (15) miles unless refueling facilities can be provided at the drop site. The following equipment is needed:

Clevis, 9 ea
20 foot nylon strap, 4 ea
9-13 foot nylon strap, 4 ea
Nylon doughnuts, 2 ea
20 pound sledge, 1 ea
T-bar, 1 ea
Flashlight, 1 ea
60" pinch bar, 1 ea
Chain comealong, 1 ea

Section 2, Part II, Recommendations

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1. The direct support combat missions performed by this battalion during this reporting period differed somewhat from previous combat support missions in that they involved the use of the 27th Land Clearing Team during its initial deployment in a combat zone and the repair of forward C-130 airstrip during the rainy season. Many of our lessons learned and recommendations are included in Part I of this section. However, there are several significant matters which became evident during the operations, that are now being analyzed in detail by the battalion. These are worthy of special mention, and my preliminary recommendations are included in this section of the report.

2. First, as regards the 27th Land Clearing Team and its deployment in a major jungle clearing operation. The team as it is presently organized is completely dependent upon other units for all essential support. In order to provide adequate maintenance support to the team, the battalion maintenance section was stripped of forty (40) percent of its capability including the battalion engineer maintenance warrant officer. This resulted in the remainder of the battalion being deprived of much of its maintenance capability in the vital area of engineer equipment. In addition, to properly command and control the team's operation, to maintain liaison with the security force to insure the many logistical arrangements are made, and to keep up with the reporting requirements of the supported unit it is necessary to attach the team to a combat engineer line company. Then the company commander acts as the senior engineer officer for the clearing operation and allows the Land Clearing Team Leader to be free to conduct the day-to-day operations. This situation works well for the clearing operation, but since the entire company is not required in the operation, you end up with a company (-) in garrison conducting base cantonment construction without the command element. I recommend that the land clearing be organized as a company with a captain as commander, a lieutenant to command each ten (10) dozer platoon and an engineer maintenance warrant to head the company maintenance section. The non-commissioned officers would include an E-8 as first sergeant, three (3) E-7's as platoon sorgeants, three (3) E-6's as assistant platoon sergeants and one (1) E-6 as maintenance sergeant. In addition, the unit should have the normal support elements, (i.e., mess, supplies, etc) found in a company. If this concept was utilized the team would be prepared to operate for an extended period of time with the normal support provided a company by its parent battalion (an exception to this would be field maintenance support which should be provided by a detachment from the direct support maintenance battalion which normally supports the battalion).

3. During the past reporting period the 168th Engineer Combat Battalion conducted airfield repair missions on three (3) forward locations. As the rainy season closed in, it became apparent that to attempt any major earthmoving project during this period of time was foolhardy. An example was Dong Xoai, an airstrip with abundant laterite, and even a limited quantity of rock. However, extremely heavy rains limited construction to one day in ten so the work force was extracted with the parking apron only sixty percent complete. In future operations considerations should be given to attempting major repair missions only during the dry season, and to just keeping the airfield usuable during the rainy season.

4. As the combat support missions become more frequent, the criteria for forward airfields becomes more sophisticated, the base cantonment mission is also becoming more demanding on the battalion. As was pointed out in the previous reports, the combat engineer battalion does not possess at battalion or company level the supervisory personnel to adequately perform the extensive amount of control required in the MCA program and still properly coordinate the many combat support missions. In addition, as our "standard of living" becomes higher, combat engineer troops are performing more complex construction. This requires more detailed planning at staff level, and more detailed supervision at company level. As a result, the battalion is constantly "robbing Peter to pay Paul" or causing one mission to suffer at the expense of the other which may be of a higher priority at that time. I recommend: first, that selected non-dividional combat engineer battalions in each group be relieved from their MCA responsibilities and directed primarily toward combat support; or second, that two additional officers in the grade of captain and lieutenant, and four non-commissioned officers in the grade of staff sergeant be assigned to each battalion chargod with a dual mission.

John R. Manning

JOHN R. MANNING
LTC, CE
Commanding

4 Incl:

1. Organization Chart
67X139 2. ~~After Action Report (Manhattan)~~
67X140 3. ~~After Action Report (Tong Le Chan)~~ Withdrawn, Hqs, DA
67X141 4. ~~After Action Report (Chu Linh)~~

EGE-CO (15 Aug 67) 1st Ind
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for the Quarterly Period Ending 31 July 1967

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DA, Headquarters, 79th Engineer Group, APO 96491 22 August 1967

TO: Commanding General, 20th Engineer Brigade, APO 96491

The Operational Report - Lessons Learned submitted by the 168th Engineer Battalion has been reviewed and is considered adequate. This headquarters concurs in the recommendations contained therein and emphasizes the following points:

a. Section 2 Part I Para 1a. It is essential to provide the soldier the service he needs on a close basis. In an area isolated by Viet Cong interdiction of convoy routes, the extra travel, inconveniences, and loss of productive effort are not compensated for by a paper exercise theoretically providing extra benefits through consolidation.

b. Section 2 Part I para 1b and 1c. The Land Clearing Team's organization is basically inadequate in that it cannot sustain itself, but instead, detracts from the capabilities of the unit from which it draws support. This headquarters recommends that the Land Clearing Team be reorganized under an MTOE and given a company type organization, which would be able to sustain itself to the same degree as any other combat company.

c. Section 2 Part I para 1d. The practice of having a combat engineer company in charge of base camp development, such as Phuoc Vinh, and the many phases of engineering operations in which a company is engaged in Vietnam, render the position of Operations Sgt essential to the efficient functioning of the company. At the present time every engineer company is faced with the problem of having to take an enlisted leader from a squad or platoon in order to perform this vital function.

d. Section 2 Part I Para 2b. An APC is essential to provide the control and mobility required. Mobility and constant contact with the elements of the clearing team are essential for efficient control. Due to the nature of the terrain, especially after cutting has commenced, a ¼ ton Jeep is worthless as a means of control and the need for another type of transportation, such as an APC, is apparent.

e. Section 2 Part I Para 2c. Jungle terrain which has been cleared with a Rome plow is characteristically virtually impassable to any type of wheeled vehicle or trailer, especially one as easily susceptible to damage as the 250 cfm compressor.

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f. Section 2 Part I Para 2j. A definite means of assigning responsibility for the materials on a construction site is needed.

g. Section 2 Part I Para 5a. The delay caused by the deadline of the Rome plows due to the lack of common items is unacceptable from an operational point of view. An overpack kit is essential for efficient operation.

h. Section 2 Part II Para 2. See remarks in Para b above.

i. Section 2 Part II Para 3 and 4. Stricter adherence to the capabilities of an aircraft is a must. The majority of the aircraft in the theater of operations are designed for combat operations and yet a great amount of engineer effort is expended on sophisticated support systems, such as parking aprons, etc. The present combat support requirements presently existing are rapidly exceeding the capabilities of the TO&E equipment available. Additionally, in the field of base construction, the needless refinements, such as special ovens, meat grinders, steam tables, etc, appear excessive in a combat theater and exceed the capabilities of the constructing units.

t/JOSEPH A. JANSEN
Colonel, CE
Commanding

AVBI-OPN (15 Aug 67) 2nd Ind
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 July 1967

27 DA, Headquarters, 20th Engineer Brigade, APO 96491 1 September 1967

TO: Commanding General, USAECV (P), ATTN: AVCC-P&O, APO 96491

1. The subject report, submitted by the 169th Engineer Battalion, 79th Engineer Group, has been reviewed by this headquarters, and is considered comprehensive and of value for documentation and review of the reporting units activities and experiences.

2. This headquarters concurs with the submitted report, with the following comment:

Section 2, part 1, paragraph 1b: The land clearing teams are not provided clerical personnel in that these clerical personnel are located on the battalion TO&E. The battalion they are supporting is responsible for their administrative support.

FOR THE COMMANDER:

s/Cecil D. Clark
t/CECIL D. CLARK
Major, CE
Adjutant

Info copy:
CO, 79th
Engr Gp

AVCC-P&O (15 Aug 67) 3d Ind CPT Whitley/bw/LBN-4581
SUBJECT: Operational Report-Lessons Learned for the Quarterly Period Ending 31 July 1967

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HEADQUARTERS, UNITED STATES ARMY ENGINEER COMMAND VIETNAM(PROV), APO 96375

TO: Commanding General, United States Army Vietnam, ATTN: AVHGC-DH. APO 96375

This headquarters concurs with the 168th Engineer Battalion's ORLL and previous indorsement as written, subject to the following comments:

1. Reference Section 2, Part I, paragraph 1a, page 10: Nonconcur. The reasons for consolidation of financial administration as directed by DA were:

a. Reduction of erroneous payments.

b. To preclude Unit Personnel Officers being held liable for previous overpayments of separated personnel.

c. To establish a compatable system of financial administration and accounting procedures from which the Centralized Automatic Military Pay System, due in July 1968, may be implemented.

2. Reference Section 2, Part I, paragraph 5b, page 17: Concur. As an interim solution, a field-fix reinforcement modification has been developed and is being forwarded to units. 1st Logistical Command has requested that USAMEC ship heavy duty radiator grills and guards, and crank case guards.

FOR THE COMMANDER:

s/Paul A. Loop
t/PAUL A. LOOP
Colonel, CE
Chief of Staff

Cys Furn:
CG, 8th US Army, ATTN: Engr
CG, 20th Engr Bde
CO, 79th Engr Gp
CO, 168th Engr Bn

"THIS PROTECTIVE MARKING IS CANCELLED ON 1 JAN 70"

AVHGC-DST (15 Aug 67) 4th Ind
SUBJECT: Operational Report - Lessons Learned for the Period Ending 31 July 1967 (RCS CSFOR-65) (U)

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96375 21 NOV 1967

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the period ending 31 July 1967 from Headquarters, 168th Engineer Combat Battalion (WAOD) as indorsed.

2. Pertinent comments follow:

a. Reference item concerning personnel section, page 10, paragraph 1a: Concur with 3d Indorsement. Consolidation of financial administration was a DA directed action to improve pay procedures and will apply to all non-divisional US Army units in RVN.

b. Reference item concerning strength of land clearing team, page 11, paragraph 1c: MTOE action is under way at this time. USAECV (P) is in the process of preparing MTOE's for all engineer units in-country for standardization action.

c. Reference item concerning communications, page 11, paragraph 2a: Concur. USAECV (P) has submitted a list of units requiring conversion to the new series of radios. It will be used as a basis for both expedited delivery and to order additional radios as required.

d. Reference item concerning 250 CFM air compressor (trailer mounted), page 12, paragraph 2c and 1st Indorsement, paragraph e: Concur. Action has been taken to provide the required "rough terrain" capability:

(1) USAECV (P) has submitted an MTOE to USARV requesting replacement of the prime mover and trailer for the 250 CFM air compressor. The M548 tracked cargo carrier will be used as a replacement.

(2) The 9th Infantry Division has provided an M548 tracked cargo carrier to the 8th Land Clearing Team for this purpose.

e. Reference item concerning quarry-crusher operation, page 15, paragraph 3: MTOE action is currently being taken to provide the additional personnel required for quarry operation.

f. Reference item concerning Rome Plow parts, page 16, paragraph 5a: Nonconcur. A special PLL, over and above the normal PLL, has been developed

AVHGC-DST 4th Ind
SUBJECT: Operational Report-Lessons Learned for the Period Ending 31 July 1967 (RCS CSFOR-65) (U)

for the Rome Plow, based on those parts with the highest failure rate. This was a special action to provide for land clearing teams. Heavy duty Rome Plow attachments have been standardized and will begin to arrive as soon as the Caterpillar Strike ends. Additionally the USAECV(P) has distributed a plan for a locally fabricated radiator guard. These actions, in conjunction with command emphasis on maintenance procedures, should preclude further serious difficulties. 30

3. A copy of this indorsement will be furnished to the reporting unit through channels.

FOR THE COMMANDER:

C. S. NAKATSUKASA
Captain, AGC
Assistant Adjutant General

4 Incl
nc

cc:
HQ, 168th Engr Combat Bn
HQ, United States Army Engr Comd Vietnam (Prov)

GPOP-DT(15 Aug 67) 5th Ind
SUBJECT: Operational Report for the Quarterly Period Ending 31 July 1967 from HQ, 168th Engr Cbt Bn (UIC: WAODAA) (RCS CSFOR-65)

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HQ, US ARMY, PACIFIC, APO San Francisco 96558 13 DEC 1967

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D. C. 20310

This headquarters has evaluated subject report and forwarding indorsements and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

K. F. OSBOURN
MAJ, AGC
Asst AG

4 Incl
nc

IY

APPENDIX

FRONT-LOADER/FORKLIFT MODIFICATION

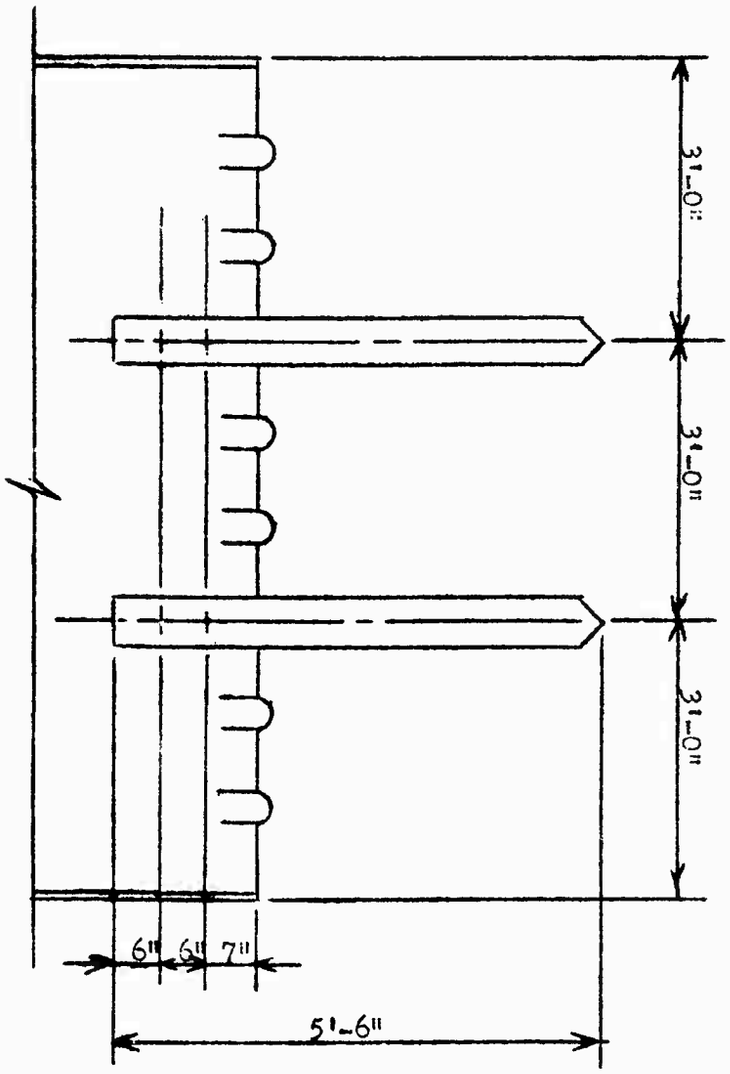

FIGURE 1

Annex I

30

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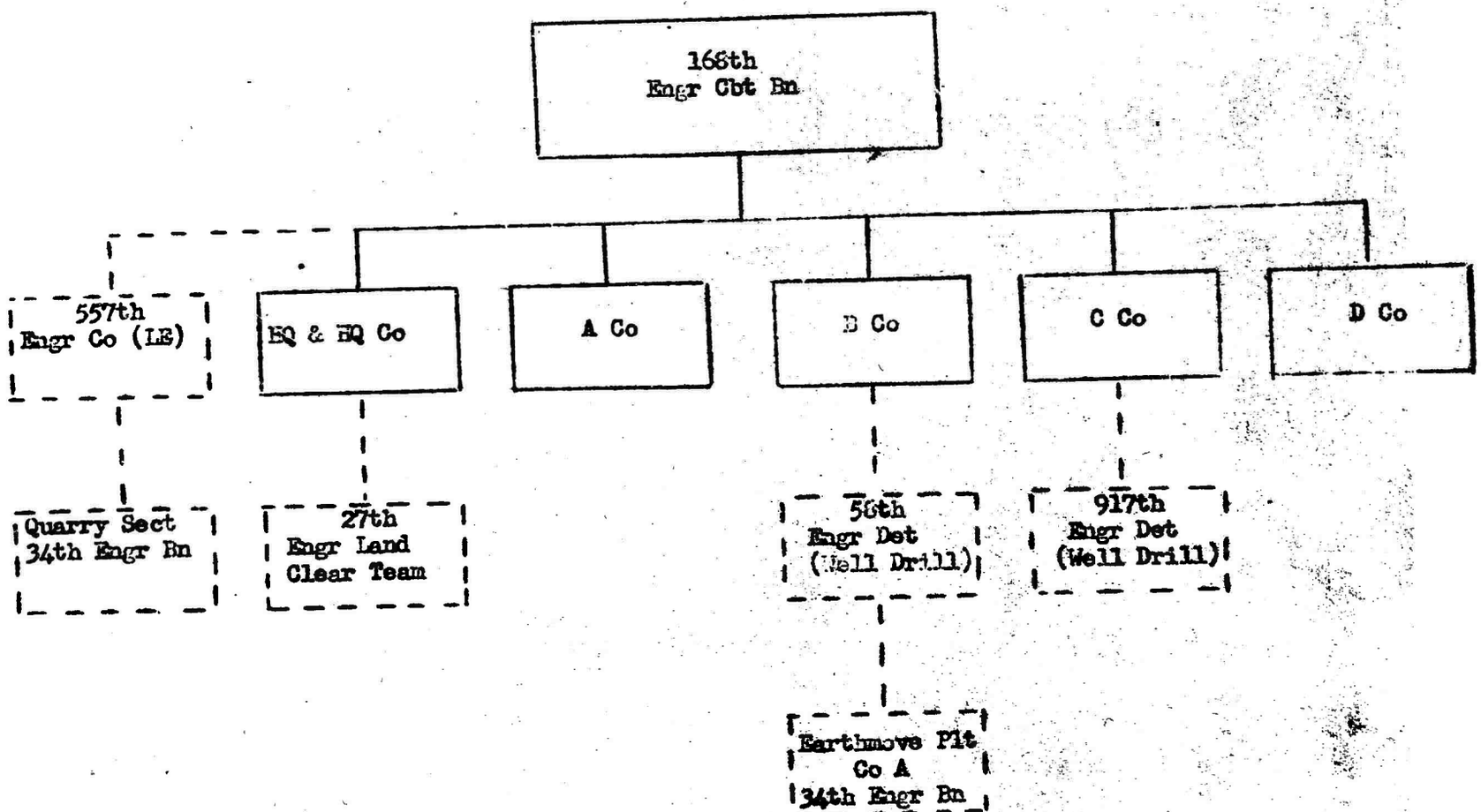

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